

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C. 20231
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year)

20 January 2000 (20.01.00)

International application No.

PCT/SE99/00696

Applicant's or agent's file reference

TP 1276 WO

International filing date (day/month/year)

28 April 1999 (28.04.99)

Priority date (day/month/year)

29 April 1998 (29.04.98)

Applicant

GÖRANSSON, Christer et al

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

26 November 1999 (26.11.99)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

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The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

R. E. Stoffel

Telephone No.: (41-22) 338.83.38

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 02 AUG 2000

Applicant's or agent's file reference TP 1276 WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/SE99/00696	International filing date (day/month/year) 28.04.1999	Priority date (day/month/year) 29.04.1998
International Patent Classification (IPC) or national classification and IPC ₇ A23L 3/18 // A23C 3/033		
Applicant Tetra Laval Holdings & Finance S.A. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 26.11.1999	Date of completion of this report 19.07.2000
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Inger Löfgren / MRo Telephone No. 08-782 25 00

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE99/00696

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☒ the international application as originally filed.
- ☐ the description, pages _____, as originally filed,
 pages _____, filed with the demand,
 pages _____, filed with the letter of _____,
 pages _____, filed with the letter of _____.
- ☐ the claims, Nos. _____, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. _____, filed with the letter of _____,
 Nos. _____, filed with the letter of _____.
- ☐ the drawings, sheets/fig _____, as originally filed,
 sheets/fig _____, filed with the demand
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE99/00696

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>3-7</u>	YES
	Claims	<u>1-2</u>	NO
Inventive step (IS)	Claims	<u>3-7</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-7</u>	YES
	Claims		NO

2. Citations and explanations

Cited document:

D1: EP554961, (col. 6, line, 56 - col. 7, line 25)

The claimed invention is related to a method for maintaining the pressure difference in a heat treatment plant for liquid food products. In the heat treatment plant use is made of already pasteurised product to heat incoming, cold, product. Care must be taken to avoid leakage from the unpasteurised product into the pasteurised product. The risk is avoided by maintaining an overpressure on the pasteurised product. Due to production disturbances, like return strokes, keeping the overpressure is sometimes a problem.

According to claim 1-2, the pressure difference is maintained in that the treated product is enclosed in a conduit on the downstream side of the plant and the space for the product is restricted by enclosing the product between a return stroke valve and a shut-off valve.

From D1 a method for heat treatment of a product is known. The method comprises a control unit measuring the pressure difference between the incoming, cold product and the outgoing, hot product. When the prescribed pressure difference cannot be kept, the product is enclosed. This is done by closing a product pump and changing a multi way valve, to short-circuit the product, coming from the pasteuriser.

The invention, according to claims 1-2, therefore is not novel.

The invention according to claims 3-7 is novel and is not considered to be obvious. The invention, according to claims 3-7, therefore involves an inventive step.

The invention is also considered to be industrially applicable.

PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference TP 1276 WO	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">FOR FURTHER ACTION</div> <div style="font-size: small;">see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</div> </div>	
International application No. PCT/SE 99/00696	International filing date (<i>day/month/year</i>) 28 April 1999	(Earliest) Priority Date (<i>day/month/year</i>) 29 April 1998
Applicant Tetra Laval Holdings & Finance S.A. et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (See Box I).

2. ☐ Unity of invention is lacking (See Box II).

3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing

☐ filed with the international application.
☐ furnished by the applicant separately from the international application,

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ transcribed by this Authority.

4. With regard to the title, ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is:

Figure No. 1
☒ as suggested by the applicant.

☐ None of the figures.

☐ because the applicant failed to suggest a figure.
☐ because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 99/00696

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: A23L 3/18 // A23C 3/033

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: A23L, A23C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0554961 A1 (FRIESLAND (FRICO-DOMO) COOPERATIEVE B.A.), 11 August 1993 (11.08.93), column 6, line 56 - column 7, line 25 --	1-2
A	US 2197118 A (W. ASTLE), 16 April 1940 (16.04.40), column 1, line 1 - line 33; column 2, line 45 - line 50; column 6, line 20 - line 35 --	1-7
A	DE 4025570 A1 (RIEKEN, GERD), 10 October 1991 (10.10.91), column 2, line 21 - column 3, line 47 --	1-7
A	DE 29710507 U1 (FISCHER, HARALD), 18 Sept 1997 (18.09.97), claims 1-12 --	1-7

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

5 July 1999

Date of mailing of the international search report

13 -08- 1999

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INTERNATIONAL SEARCH REPORT

Information on patent family members

01/06/99

International application No.

PCT/SE 99/00696

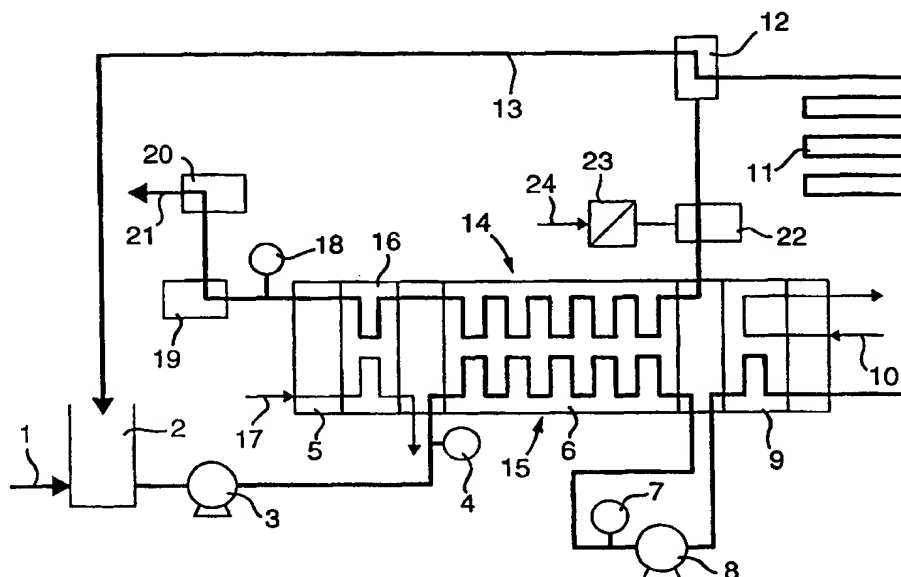
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0554961 A1	11/08/93	DE 69311389 D,T DK 554961 T NL 9200235 A US 5360055 A	15/01/98 05/01/98 01/09/93 01/11/94
US 2197118 A	16/04/40	NONE	
DE 4025570 A1	10/10/91	NONE	
DE 29710507 U1	18/09/97	NONE	



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A23L 3/18 // A23C 3/033		A1	(11) International Publication Number: WO 99/55175
			(43) International Publication Date: 4 November 1999 (04.11.99)
(21) International Application Number: PCT/SE99/00696 (22) International Filing Date: 28 April 1999 (28.04.99) (30) Priority Data: 9801507-6 29 April 1998 (29.04.98) SE (71) Applicant (for all designated States except US): TETRA LAVAL HOLDINGS & FINANCE S.A. [CH/CH]; 70, avenue Général-Guisan, CH-1009 Pully (CH). (72) Inventors; and (75) Inventors/Applicants (for US only): GÖRANSSON, Chris- ter [SE/SE]; Gyllenpalmsgatan 2, S-211 30 Malmö (SE). JÄNSSON, Magnus [SE/US]; 545 Spinnaker Bay #206, Greenwood, IN 46143 (US). PALM, Bengt [SE/SE]; Ny- lyckevägen 4, S-240 13 Genarp (SE). (74) Agent: BRUNNSTRÖM, Gunilla; AB Tetra Pak, Patent Dept., Ruben Rausing's gata, S-221 86 Lund (SE).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.	

(54) Title: A METHOD OF MAINTAINING THE PRESSURE DIFFERENCE IN A HEAT TREATMENT PLANT



(57) Abstract

The invention relates to a method of maintaining the pressure difference in a heat treatment plant such as, for example, a pasteuriser for liquid foods. In a temporary production disruption, the insufficiently treated product is caused to recycle by a return stroke. The pressure difference is maintained in that the already heat-treated product is enclosed in a conduit on the downstream side (14) of the plant, and that the space for the product in the conduit is restricted. The space for the product is restricted either in that a food gas is led into the conduit, or alternatively that the product conduit (29) is provided with an expansive portion (27). The expansive portion (27) consists of a pipe length (28) with an inner elastic wall (30) which expands by means of a gas or a liquid.

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